



## Case Series: Pelvic Floor Rehabilitation for Urinary Incontinence Post Prostatectomy

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### Abstract

**Background:** Healthcare professionals involved in the care of men diagnosed with prostate cancer know the importance of providing a holistic plan of care for post prostatectomy patients. There are several case studies that have found it beneficial for adding pelvic floor muscle rehabilitation to post surgery protocols along with other treatments including biofeedback and electrotherapeutic modalities. Few other studies differ their opinion that rehabilitation should begin pre-surgery and continue post-surgery with no therapeutic modalities. Currently, there are limited studies in recommendation for pre and post screening and in addition of the treatment approaches used by healthcare professionals to ensure to improve the quality of life and return of function to the pelvic floor in men who have undergone prostatectomy.

**Objective:** To measure the effectiveness of pelvic floor muscle rehabilitation in male patients with urinary incontinence post prostatectomy

**Design:** A review of literature of before-after studies, reviews, prospective and qualitative studies and case series on the effect of pelvic floor muscle rehabilitation for urinary incontinence after prostatectomy

**Results:** A total of 5 patients were identified for the study. The validity of the trials was moderate to high for a reduction in incontinence from 6 months to 1 year from date of surgery. There was a trend in the reviews for pre-operative and post-operative management using pelvic floor muscle rehabilitation to improve incontinence. The qualitative study showed evidence of the use of behavioral therapy to overcome intrinsic and extrinsic barriers during pelvic floor muscle rehabilitation for improving the outcomes of male urinary incontinence after prostatectomy surgery.

**Conclusion:** More research is needed for the cases to further show the significance of holistic care utilizing physiotherapy interventions. There is some evidence that both post-operative and early pre-operative pelvic floor rehabilitation is beneficial for better outcomes of the level of male incontinence after prostatectomy.

**Limitations:** A literature review on the efficacy of physiotherapy on the treatment of post prostatectomy urinary incontinence reveals that physiotherapists have an integrated role as a part of the healthcare team for improving the quality of life of men after prostatectomy. Further research is necessary to validate the efficacy of physiotherapy interventions.

**Keywords:** Pelvic Floor; Urinary Incontinence; Prostatectomy; Pelvic Floor Rehabilitation; Pelvic Floor Rehabilitation; Pelvic Floor Biofeedback; Electrical Stimulation

## Abbreviations

ICS: International Continence Society; UI: Urinary Incontinence; PFR: Pelvic Floor Rehabilitation; PFMT: Pelvic Floor Muscle Testing

## Introduction

Currently there is lack of research regarding specific time duration for when to start pelvic floor muscles rehabilitation after prostatectomy to maximize the return of function for urinary incontinence. The role of pelvic floor is “to provide support of the pelvic organs and prevent incontinence by voluntary closure of the urethral sphincter and anal sphincter”, thus controlling bladder and bowel function. Physiotherapist use strategies such as strengthening, electrical stimulation, biofeedback and behavioral therapy to treat pelvic floor dysfunction. The healthcare system has recognized the need to incorporate men for pelvic health screening from the above, physiotherapists began to recognize the need to address the pelvic floor dysfunctions of the males after prostate surgeries. After surgery however, men continue to suffer from urinary incontinence (UTI), some of the problems may be solved by technology. The literature reviews are not clear in the branch of urologists when it comes to offering pelvic floor rehabilitation to patients before recommending prostate surgery [2].

## Discussion

The international continence society (ICS) has defined urinary incontinence as leakage of any amount of urine [3]. There are about six types of urinary incontinence- Stress incontinence is typically experienced after prostatectomy. The literature reports a large range in the prevalence of urinary incontinence in males after prostatectomy [4]. Many patients seem to show some recovery 1year after prostatectomy, however more better outcomes could be experienced better with the addition of pelvic floor muscles training in recommended following removal of the catheter. Patients of the group performed three sets per day of the same exercise of fast and slow stretch training. Patients of the group exercised in the posture disturbed above and thus protocols more maintained throughout the 12 weeks assessment period. Subjects in the study were unstructured and directed to perform these sets of PFM exercises per day, with 10 contractures per set, aiming to held for a duration of 10sec with an equal rest time, thus providing a total of 30 contractures per day. Daily exercise sets were performed once each in supine, sitting the standing [6]. Keeping this interpretation

in mind the current clinical practice [7] the incidence of urinary incontinence prior to prostatectomy surgery is very low affecting rarely 1-2% of male population following prostatectomy surgery. However, this changes to 69-98% men affected with urinary incontinence. In physiological studies designed for strength training it is recognized that maximal force generation is achieved by performing three to four sets of 8-12 repetitions per day, which also results in hypertrophy of type 2a fibers [8]. There are many previous studies of PFM training in post-prostatectomy patients while some studies reported positive results and concluded the importance of PFM training and few Cochrane studies suggested that an active intervention did not accurate the spontaneous recovery. There was an increase in the recovery speed in the active rehabilitation intervention targeting physiological PFM function fast and slow twitch muscle fibers.

## Patients information

### Case study 1

A 62 years old male retired was admitted for prostatectomy. The first session of physiotherapy began with patient education followed by pelvic floor muscles training in supine as well as in sitting every four times a day. The patient showed good recovery and was further progressed to exercises in standing. The session were concluded with four sets of 8-12 repetitions per day, which also included PFM function of fast and slow twitch muscles fibers.

### Case study 2

A 60 year old male was recently operated for enlarged prostate, initially basic activation of pelvic floor muscles was given followed by patients education. In the subsequent session pelvic floor muscles training in supine, sitting and standing 3 times in a day was done. The session were concluded with four sets of 10-12 repetitions per day which including PFM function of fast and slow twitch fibers.

### Case study 3

A 64-year-old male, after getting discharged from the hospital on the 12<sup>th</sup> day was given pelvic floor muscles training. He was prescribed pelvic floor muscles contractions 4 times a day with 3 sets of 10-12 repetitions per day. The patients showed good recovery and was prescribed exercises in supine, sitting and prone.

**Case study 4**

A 74-year-old male, with diabetes and hypertension was treated at the clinic after one month post prostatectomy. He was prescribed pelvic floor rehabilitation including function of slow and fast twitch muscle fibers. The physiotherapy sessions were given in supine, sitting and standing positions 4 times a day with 3 sets of 10-12 repetitions per day. The patients showed good recovery with improvement in quality of life and recovery of function.

**Case study 5**

A 68-year-old male was admitted for prostatectomy. Post prostatectomy, he was recommended pelvic floor rehabilitation. The sessions included fast and slow muscle fibers pelvic floor muscle contractions. The physiotherapy sessions were given in supine, sitting, and standing positions 4 times a day with 3 sets of 10-12 repetitions per day. The patients showed good recovery of function and improved quality of life.

**Procedure**

Post prostatectomy PFM training commenced following removal of catheter. Patients of the study performed 3 sets per day of the same exercise with 4 sets per day of fast and slow twitch training. The study group exercised in supine, sitting, and standing postures and these protocols were maintained throughout the 12-week assessment period.

**Outcome measures**

Bladder diaries for recording 24 hours pad weight (the primary outcome variable) were assessed post prostatectomy at 2,6 and 12 weeks. No patient was incontinent prior to surgery; however, all wore pads after surgery and applied their first pad of the day with and empty bladder. Used pads were placed in a sealed plastic bag, then stored in a refrigerator to avoid evaporation. Net weight was calculated by deducting dry pad weights, using a digital scale. Any positive net weight recorded to the nearest 1 g was inaccurate of incontinence with ‘zero’ net weight assessed as no leakage and full continence.

Physical activity, fluid intake and pad weights were recorded in 24hrs bladders diary for each patient. Re-test measures were recorded on the same day of the week to account for variable activity levels thus avoiding any presential discrepancy between sedentary and physically active days of the week. 2 gynecologists

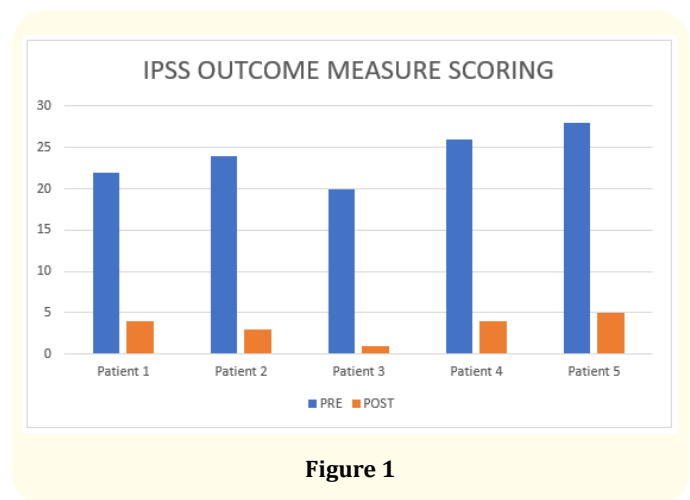
and 3 oncologists working from two difference hospitals referred patients to the clients. Second outcome measures were Qol using the International Prostate Symptom Score (IPSS) [9] and pelvic floor Impact-Questionnaire (PF1Q-7) [10] were recorded at baseline and again after last session. i.e., 12 weeks post pelvic floor rehabilitation. Patients completed the questionnaire in a quiet private room at the completion of a schedule appointments at the physiotherapy clinic.

**Results**

The study participants received retropubic prostatectomy or radical prostatectomy included studies assured the following interventions post-surgical pelvic floor muscles training, supervised, home- based pelvic floor muscles training and PFMT combined with resistance and flexibility exercises. Following pelvic floor rehabilitation, participants showed an impact on the PFM function and improvement in IPSS, EPIC-CP and RTUS PFM function test.

IPSS outcome measure scoring	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Pre	22	24	20	26	28
Post	4	3	1	4	5

**Table 1**



**Figure 1**

PF1Q-7 SCORING	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
PRE	220	200	260	250	205
POST	105	100	90	90	95

Table 2

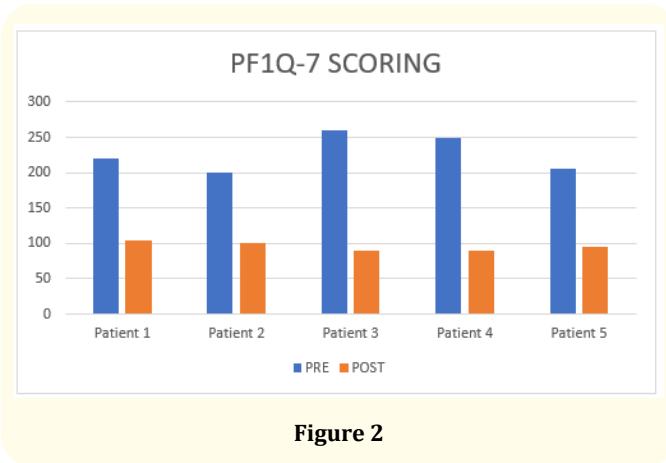


Figure 2

24 hour pad test (gm)	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
pre	75	70	80	60	68
post	20	18	25	16	12

Table 3

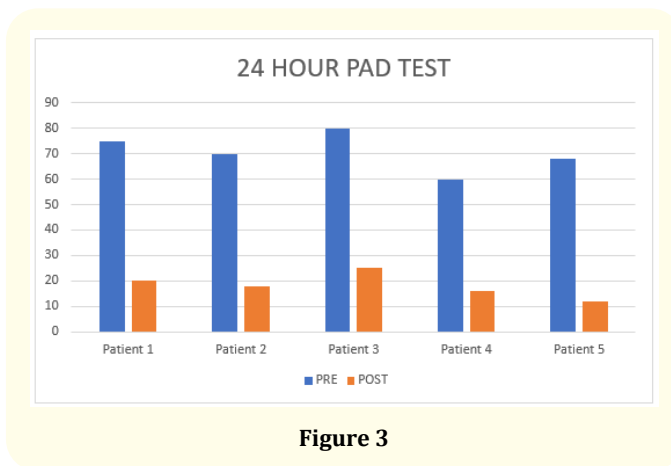


Figure 3

### Conclusion

In this case series a positive effect of pelvic floor muscles rehabilitation the recovery of post-prostatectomy urinary incontinence was observed. However, more research with higher quality is needed to confirm the real efficacy of pelvic floor rehabilitation.

### Source of Funding

None

### Conflict of Interest

None.

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